

September 9, 2021

Ms. Shari Kolak Task Order Contracting Officer's Representative U.S. Environmental Protection Agency 77 West Jackson Boulevard Chicago, IL 60604-3507

**Subject:** Final Site Management Plan

East Troy Contaminated Aquifer Site, Troy, Miami County, Ohio

DES Contract 68HE0318D0014 Task Order 68HE0521F0054

Dear Ms. Kolak:

Tetra Tech, Inc. prepared the enclosed final site management plan (SMP) for the East Troy Contaminated Aquifer (ETCA) Superfund site, in Troy, Miami County, Ohio, under the U.S. Environmental Protection Agency (EPA) CLIN2 Contract for Region 5, Contract No. 68HE0318D0014, Task Order (TO) No. 68HE0521F0054. Under this TO, Tetra Tech will perform remedial design (RD) activities at the ETCA site in accordance with EPA's Task Order Request.

If you have any questions about this submittal, please call me at (312) 201-7748.

Sincerely,

Ray Mastrolonardo, PG

Project Manager

R Masterlanardx

Enclosure

cc: Shelia Dolan, EPA Task Order Contracting Officer

Natalie Topp, EPA Contract Specialist Linda Martin, EPA Project Officer

Mindy Gould, Tetra Tech, Inc. Regional Coordinator

## DESIGN AND ENGINEERING SERVICES CONTRACT LINE ITEM NUMBER (CLIN2)

# FINAL SITE MANAGEMENT PLAN FOR REMEDIAL DESIGN EAST TROY CONTAMINATED AQUIFER SITE TROY, MIAMI COUNTY, OHIO

Prepared for United States Environmental Protection Agency Region 5 77 West Jackson Boulevard Chicago, IL 60604

Date Submitted: September 9, 2021

EPA Region: 5

Task Order No: 68HE0521F0054
Contract No: 68HE0318D0014
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#### 1.0 INTRODUCTION

Tetra Tech prepared this site management plan (SMP) to support the remedial design (RD) activities for the East Troy Contaminated Aquifer (ETCA) site in Troy, Miami County, Ohio. The RD is being conducted under the U.S. Environmental Protection Agency (EPA) Design and Engineering Services (DES) Contract Line Item Number (CLIN) 2 Contract No. 68HE0318D0014, Task Order (TO) No. 68HE0521F0054. For the ETCA site, two separate designs will be prepared under this task order: one design for soil excavation and off-site disposal and one design for vapor intrusion (VI) mitigation systems. This SMP describes the responsibilities for managing all RD activities, including the predesign investigation (PDI) to be performed at the East Water Street soil source area. The East Water Street soil source area PDI will provide information necessary to support the soil excavation design. Activities for the soil source area PDI include access, security, storage and disposal of investigation-derived waste (IDW), waste management, and other procedures to be followed in the field. No PDI is anticipated to be required for the VI mitigation design; industry standard designs and data collected during prior investigations at this site will be sufficient to support this task.

#### 2.0 SITE BACKGROUND

The ETCA site is located in the City of Troy, Miami County, Ohio (see Figure 1). The site contains contaminated groundwater, which has impaired water quality in the local sand and gravel aquifer. The contamination is present in two separate volatile organic compound (VOC) plumes that likely have originated from different sources:

- The Residential plume originates near Walnut Street (adjacent to the former Troy One Hour Cleaners) and trends southeastward, parallel to and eventually comingling with the East Water Street plume.
- The East Water Street plume originates in the vicinity of the former Hobart Brothers Cabinet Company and trends southeastward.

The aquifer is the sole source of drinking water in the area. The groundwater contamination has also impaired indoor air quality in structures above the groundwater contaminant plumes, through VI. Contaminated soils are present in and adjacent to the suspected source areas of the East Water Street plume. The original sources of the Residential plume no longer exist, and the source area has been extensively reworked and is covered by more recent construction. It is unknown if contaminated soil remains in the vadose zone at that location. Groundwater in the saturated zone in the vicinity of the Residential plume source area contains concentrations of PCE in part per million (ppm) levels, with the

highest concentrations approximately 20 to 40 feet below the water table, suggesting that back-diffusion of PCE from fine-grained materials in the saturated zone may be acting as a secondary, ongoing source of contamination.

The site overlies a prolific sand and gravel aquifer that is considered a sole source aquifer system. The term "sole-source aquifer" is a federal designation used to protect drinking water supplies in areas with few or no alternative sources of drinking water. The City of Troy obtains its public water supply, which serves approximately 25,000 residents, from two wellfields that draw from this aguifer, located on the east side of the Great Miami River (GMR). The West wellfield is located about 0.75 mile north of the ETCA site. Impacts to the West wellfield originate from other suspected sources and are being addressed as a separate site (West Troy Contaminated Aquifer site). The East wellfield is located at the southeastern boundary of the ETCA site and includes five production wells. The chlorinated VOC, cis-1,2dichoroethene (cDCE), has been detected at low concentrations (below the EPA Maximum Contaminant Levels [MCL]) in water samples collected from several wells in the East wellfield, most frequently in Well P-18. The origin of the cDCE is suspected to be from the breakdown of low concentrations of tetrachloroethene (PCE) and trichloroethene (TCE) from an area west of the GMR, which are then being drawn beneath the river through deeper portions of the aquifer near the East wellfield. The overall direction of groundwater flow is to the southeast (generally parallel to the GMR) but is locally affected by pumping in the East wellfield. The entire ETCA site lies within the modeled 5-year time of travel (TOT) for the East wellfield production wells. At the time of the 2015 remedial investigation (RI), some local residents in Troy were using non-potable water from private wells installed in the aquifer. However, a City of Troy ordinance now restricts use of private potable water supply wells within the city and none are known to be in use at the site.

The Residential plume is located within a predominantly residential area southwest of East Main Street. This plume primarily contains PCE at concentrations greater than 1,000 micrograms per liter ( $\mu$ g/L) in the source area, with TCE and cDCE occasionally detected at lower concentrations. The Residential plume flows beneath an area of mainly older, single-family residences mixed with a few businesses, churches, and schools. Figure 2 shows the area being considered for VI mitigation systems.

The second primary area of groundwater contamination, referred to as the East Water Street plume, extends from behind the former Hobart Cabinet Company (Hobart) building at 301 East Water Street, extends beneath the Hobart building (which remains), and then continues to the southeast beneath and parallel to East Water Street. The area above the plume is a mixed industrial, residential, and institutional

use area. PCE, TCE, and cDCE are present in this plume. Total VOC concentrations in this plume are generally lower than those detected in the Residential plume. Soil and groundwater contamination have been detected on the Hobart property, with the highest VOC concentrations in soil detected in an apparent source area in the rear of the property in an open area between the building and the GMR (see Figure 3).

Adjacent to and downgradient of the Hobart facility is a second industrial facility, formerly Brown-Bridge Industries (now owned by Kimberly Clark) and currently being operated by Spinnaker Coatings LLC (Spinnaker), where chlorinated VOCs, including the same VOCs present on the Hobart property, have also been detected in both soil and groundwater. Soil contamination at this property is being addressed by a potentially responsible party (PRP); therefore, RD activities at the Spinnaker facility are not within the scope of Tetra Tech's RD.

The RI was completed for the ETCA site in January 2015. The RI determined that the site contained multiple contaminant sources, two groundwater contaminant plumes (the Residential plume and East Water Street plume), and multiple exposure pathways, in a complex hydrogeologic setting. In 2015, an initial set of remedial action objectives (RAOs) and potential remedial alternatives were developed by EPA, with input from the Ohio Environmental Protection Agency (Ohio EPA). The nature and extent of contamination, site complexity, and constraints caused by the site setting have significant influence on the estimated timeframes that will be required for remediation of this site to achieve the full list of potential RAOs for all areas and exposure pathways. For this reason, EPA elected to conduct a focused feasibility study (FFS) to address a focused group of RAOs and to evaluate remedial alternatives that were directly related to meeting the focused RAOs. The focused RAOs prioritized reduction of exposure risk and reduction of contaminant mass in the source areas of groundwater contamination.

The FFS led to an interim action Record of Decision (ROD) issued by EPA in 2018 (EPA 2018). The interim action ROD does not replace a final, site-wide remedy that is ultimately required for this site. The scope of the interim action also did not include complete restoration of the aquifer to "beneficial use" (removal of all manmade contaminants to achieve groundwater concentrations below EPA Maximum Contaminant Levels [MCL]). For the interim action ROD, EPA is specifically addressing (1) areas of soil contamination that exceed human health risk standards and that coincide with apparent groundwater contaminant source areas, (2) the Residential plume groundwater source area, and (3) potential VI in areas overlying the Residential plume. The proposed VI mitigation area was determined through discussion with Ohio EPA and was based on a combination of past site VI data, the groundwater contaminant plume boundaries and concentrations (as known at the time of the FFS), the conceptual

targeted groundwater treatment area identified in the FFS, and "buffer" zones extending beyond the identified plume boundaries and treatment zones.

This RD addresses only the East Water Street soil source area and VI. It does not address the Residential plume groundwater source area. The RAOs and remedial action levels (RAL) specified in the interim action ROD for the East Water Street plume source area are listed below.

#### RAOs:

- Prevent exposure to TCE in soil that poses unacceptable non-cancer hazards to future residents and future industrial/commercial workers in Exposure Area (EA)-1 (Hobart) and to future residents in EA-6 (western part of Spinnaker parking lot)
- Minimize leaching of PCE and TCE from soil to groundwater in the EAs where unacceptable noncancer hazards exist (EA-1 and EA-6)

#### RALs:

• PCE: 44 micrograms per kilogram (μg/kg)

• TCE: 34 μg/kg

The RAO and RALs specified in the interim action ROD for VI are listed below.

#### RAO:

 Mitigate potential VI into buildings overlying the targeted groundwater treatment area along with an additional buffer area extending three blocks beyond the downgradient end of the targeted treatment area to Frank Street.

Because the RAO will preemptively address potential VI within a predetermined area, RALs were calculated only for the purpose of confirmatory sampling to demonstrate that VI mitigation is effective at structures where it has been implemented. The following RALs will be used to confirm the effectiveness of the VI interim action:

Contaminant	Residential RAL	Industrial/Commercial RAL
Tetrachloroethene (PCE)	42	180
Trichloroethene (TCE)	2.1	8.8

#### Note:

Concentrations are presented in units of micrograms per cubic meter ( $\mu g/m^3$ ).

#### 3.0 SUMMARY OF PREDESIGN INVESTIGATION ACTIVITIES

PDI activities are not required and are not planned for the VI mitigation portion of the RD. Existing site data collected during the RI/FS and industry standard designs are assumed to be sufficient to support the VI mitigation design required by EPA, which includes a conceptual design for (1) residential structure VI systems and (2) commercial (larger) structure VI systems. Structure-specific modifications to these conceptual designs will be made during the remedial action as part of VI mitigation system implementation activities. It is assumed that, at most, visual reconnaissance may be conducted to verify information needed to prepare the VI mitigation design.

A PDI will be conducted at the East Water Street soil source area to acquire data necessary to support the RD (see Figure 4). Field tasks to be conducted during the PDI have been separated into pre-sampling and sampling activities. Pre-sampling activities include marking sampling locations and clearing public and private utilities. Sampling activities include advancing soil borings in the investigation area and collecting soil samples. The majority of the borings will be advanced using direct-push drilling. Soil samples collected by direct-push drilling methods will be analyzed for PCE and TCE. A select number of soil samples will be collected using hollow-stem auger drilling methods and these samples will be analyzed for a suite of waste characterization parameters and geotechnical parameters, as described in the quality assurance project plan (QAPP) (Tetra Tech 2021a). IDW will be containerized, sampled, and disposed of, as summarized in Section 6.0.

#### 4.0 SITE ACCESS

For the VI mitigation portion of the RD, access to structures will not be needed; therefore, procedures and protocols for site access are not required.

The East Water Street plume soil source area is located at the former Hobart Cabinet Company (Hobart) property at 301 East Water Street. The PDI area is almost entirely on Hobart property; however, the investigation could extend to the GMR levee to the north-northeast and to the Clay Street right-of-way to the east-northeast. Therefore, access agreements are expected to be needed for Hobart property, the City of Troy, and the Miami Conservancy District (MCD) for the levee. An active rail line is located near the northwest boundary of the investigation area; however, at this time it is assumed that site activities will not extend to, impact, or require access permission from the railroad. Site activities are anticipated in public and private areas, as follows:

- A geophysical survey to locate buried utilities and objects will be conducted over the entire investigation area.
- Drilling and soil sampling will primarily occur on private property and may also occur on public rights-of-way, property managed by MCD, and municipal property.

Public roads and driveways on the Hobart property can be used for general access to the investigation area. Based on past discussions with the City of Troy during the remedial investigation, access to work locations on public rights-of-way will be acceptable, contingent on utilities clearance, resolution of any traffic issues, and any other concerns identified by the City. Tetra Tech will work closely with the Troy City Engineer, Police, and Water and Wastewater Utility Departments, as necessary, to coordinate all activities that will occur on rights-of-way. Although work may extend onto the Clay Street right-of-way, work will be performed in the area where Clay Street terminates at the levee and therefore active traffic control is not expected to be required.

Access to specific, privately owned locations in the investigation area is contingent on voluntary access agreements to be obtained by EPA. Tetra Tech will notify the EPA Task Order Contracting Officer's Representative (TOCOR) of field access requirements, and the TOCOR will then notify the property owners within 1 week regarding any site-related activities. The TOCOR is expected to provide an initial notification of the PDI work at the site that covers the entire period of PDI activities (pre-sampling through IDW disposal). The private residents are expected to sign voluntary access agreements stipulating that the EPA and its personnel can conduct on-site work after notifying the residents during a reasonable timeframe before the work is initiated.

Sampling is expected to occur within the PDI area boundaries; however, actual sampling locations may change from proposed locations during the field program given the presence of aboveground and underground utilities and the need to obtain all necessary access agreements.

The general sequence for work at a specific location will be as follows:

Tetra Tech will notify EPA of the addresses or locations where work will occur. EPA will prepare a letter requesting access to the locations. EPA will contact the property owners or managers and access will be requested. The City of Troy and Miami County will be notified regarding any work to occur on city or county property (including rights-of-way), and any necessary permits will be obtained.

Once access is confirmed or granted and necessary permits are obtained, the locations will be field marked, and the Ohio Utilities Protection Service (OUPS) will be contacted to mark utilities in the work areas. As required by OUPS, notification will be made no earlier than 10 business days, and no later than

2 business days, before work begins at each specific location. If work extends longer than 10 days, additional notification or re-notification must be provided, as required by OUPS. As required by Ohio law, the drilling subcontractor will have primary responsibility for notifying OUPS; however, Tetra Tech will obtain and review the confirmatory e-mail notifications from OUPS and verify that the correct areas were called in and cleared. Work locations may be adjusted, if necessary, to maintain required setback distances from various utilities.

A geophysical survey will also be completed by a private contractor to locate buried utilities and objects over the entire investigation area. The survey will consist of a ground-penetrating radar (GPR) and/or electro-magnetic induction (EMI) scans of the area and the specific boring locations. The scans will be coordinated to occur at the time the borings are marked, allowing adjustment of the locations, if necessary, to provide suitable offset from buried objects or utilities.

Each property owner or manager will be informed of the dates and duration of the work. If any work is to occur on city property (including rights-of-way), the City or County Engineer and Police Department or Sheriff's Office will be notified of the proposed work dates. Currently, no work in roadways is anticipated and traffic lane closures will not be required. However, if traffic control is required, Tetra Tech will coordinate with the city or county for such activities.

Work sites will be photographed before any intrusive work begins and after work is completed, to document property condition.

Each property owner or manager will be notified when work is complete.

Pertinent contact information for coordinating site investigation activities is presented below.

Name	Affiliation	Telephone Number	E-mail Address
Shari Kolak	EPA Remedial Project Manager	(312) 886-6151	Kolak.shari@epa.gov
Scott Glum	Ohio EPA Site Coordinator	(937) 285-6065	Scott.glum@epa.ohio.gov
Thomas Funderburg	City of Troy Assistant Director of Public Services and Safety	(937) 339-7639	Thomas.funderburg@troyohio.gov
Jeff Monce	Superintendent City of Troy Water Plant	(937) 339-4826	Jeff.monce@troyohio.gov
Christy Butera	Assistant City Engineer	(937) 339-2641	Christy.butera@troyohio.gov

Name	Affiliation	Telephone Number	E-mail Address
Paul Huelskamp	Miami County Engineer	(937) 440-5656	phuelskamp@co.miami.oh.us
Amanda Phillips	Miami Conservancy District Assistant Property Administrator	(937) 223-1278	aphillips@mcdwater.org
OUPS	Ohio Utilities Protection Service	(800) 362-2764	www.oups.org

#### 5.0 SITE SECURITY

Tetra Tech will attempt to establish a temporary staging and equipment laydown area behind the Hobart building located at 301 East Water Street. However, if such arrangements cannot be made because of insufficient or inadequate space or security concerns, Tetra Tech will work with the City of Troy to make arrangements on City of Troy property. Potential staging and equipment locations include the Troy municipal wastewater treatment plant (WWTP), which is located on Dye Mill Road west of the GMR, or other designated areas acceptable to the City. As a contingency, the Water Treatment Plant (WTP), may be used. Both areas were employed as staging areas during various phases of the RI. The WWTP location is preferable because it has more space and the access route avoids heavily-trafficked main streets and bridges in the center of downtown Troy.

All personnel conducting work at the site will review and sign the health and safety plan (Tetra Tech 2021b). Site personnel will also be required to attend a daily health and safety "tailgate" meeting before work begins each day to ensure updates on specific or evolving concerns, issues, or resolutions that may affect that day's planned activities are communicated. The daily tailgate meetings will be conducted by the Tetra Tech site health and safety officer and may cover issues such as potential hazardous weather conditions and contingencies, observations regarding work practices, or location-specific considerations that may affect work on a particular day (traffic or terrain).

Tetra Tech will generally be able to control site access and security because most of the activities will occur in a fairly localized area on the Hobart property. Sampling locations may extend out to the Clay Street right-of-way or GMR levee, which is under the jurisdiction of MCD. As previously discussed, although work may extend onto the Clay Street right-of-way, the work area will be where Clay Street terminates at the riverbank/levee, and therefore active traffic control is not anticipated to be required.

Field activities must be coordinated with other day-to-day operations and traffic proximate to the sampling areas. Tetra Tech will establish an "exclusion zone" around each work area and delineate this zone with caution tape. Tetra Tech will not allow unauthorized personnel to access the exclusion zone.

Typically, work sites will be vacated by the end of each workday. Heavy equipment, such as drilling rigs, will be staged in a designated area on Hobart property or transported to the temporary site office or other secured designated area. Ordinarily, equipment will not be left in place overnight on public rights-of-way in unsecured areas. However, if it becomes necessary to leave equipment in place, permission will be obtained from the City of Troy or Miami County, the areas around the work site will be barricaded and marked with traffic control devices (such as cones and signs if needed), and the Troy Police Department will be notified.

It is likely that there will be interest from local residents or local news media regarding the scope and purpose of the field activities because work is anticipated to occur in high visibility areas adjacent to or on public property. Tetra Tech field personnel will direct all public or media inquiries to the EPA TOCOR (Shari Kolak) for further information. Field personnel will also notify the Tetra Tech project manager of any public or media inquiries.

#### 6.0 IDENTIFICATION AND MANAGEMENT OF INVESTIGATION-DERIVED WASTE

IDW is waste generated from investigative activities. IDW may include solid and hazardous waste, media (including soil, slag, sediments, groundwater, and surface water), and debris that contains "listed" hazardous waste or exhibits a characteristic of a hazardous waste. IDW may also include media and debris that are not hazardous but that are contaminated with hazardous constituents (EPA 1992).

IDW to be generated during the PDI will include homogenized soil extracted by borings as well as wastewater from decontamination and equipment rinsate procedures. The number of borings to be drilled and their relatively shallow depths will contribute to minimizing the amount of soil cuttings generated. Tetra Tech anticipates storing IDW in 55-gallon drums or tanks at either the Troy WWTP or another secured designated area. The drums will be stored in an area that trucks can readily access to facilitate disposal after the waste is characterized. If appropriate, based on characterization, water generated during the field activities may be subsequently disposed of at the Troy WWTP. A detailed discussion of managing IDW is provided in the site-specific waste management plan (Tetra Tech 2021c).

#### 7.0 REFERENCES

- Tetra Tech. 2021a. "Quality Assurance Project Plan for Remedial Design, East Troy Contaminated Aquifer Site." September 9.
- Tetra Tech. 2021b. "Health and Safety Plan for Remedial Design, East Troy Contaminated Aquifer Site." September 9.
- Tetra Tech. 2021c. "Waste Management Plan for Remedial Design, East Troy Contaminated Aquifer Site." September 9.
- U.S. Environmental Protection Agency (EPA). 1992. "Guide to Management of Investigation-Derived Waste", OSWER Directive 9345.03FS, January 15.
- EPA. 2018. East Troy Contaminated Aquifer Site Interim Record of Decision for Source Area Cleanup. September.

### **FIGURES**

(Four Pages)







